



Coalition for a Sustainable Delta

January 7, 2011

VIA E-MAIL AND U.S. MAIL

Cliff Dahm, Lead Scientist
Delta Science Program
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Re: Independent Science Board Delta Stressors Workshop

Dear Dr. Dahm,

Recently, we received electronic notice of the workshop being convened on January 12 and 13, 2011, of the Delta Stewardship Council's Independent Science Board (ISB) "to evaluate multiple stressors to the California Delta." We respectfully request that you share this letter, which we submit with the hope that it may assist the ISB in fulfilling its mission, with the board's members prior to the workshop. The assignment to the ISB to "focus on identifying alternative classifications of stressors and ways of evaluating their relative importance, especially considering interactions of multiple stressors" is at the same time worthwhile and fraught with the potential to repeat failed past efforts to bring science to bear in informing environmental policy and management in the Delta. In our view, the task should be configured into a more basic endeavor in order to provide exactly the information that is needed to lead the state and federal agencies responsible for conservation in the Delta to an effective, efficient, and accountable species recovery and ecosystem restoration agenda.

The ISB can play an essential – previously unfulfilled – role in bringing reliable information and guidance to the Delta planning process, and informing a societal understanding of environmental stressors in two ways. First, it can do so by using its summed professional judgment to identify and assess available information on environmental stressors, including, but not limited to, information on the direct and indirect effects of those stressors on species of concern, their habitats, and ecological communities. Identifying the "best science" from among the available information on environmental stressors – as is required by the Sacramento-San Joaquin Delta Reform Act of 2009 – has not yet been attempted for species of concern in the estuary or for the habitats that support them. Second, the ISB can contribute to the Delta restoration effort by providing guidance to the Delta Stewardship Council and the other relevant state (and federal) regulatory agencies, by showing them how to "use" the best available science on the effects of stressors on the Delta's species and ecosystems in their deliberations and decisions. The ISB can set forth a structured process to take reliable scientific data, analyses, and related findings, and, employ it to analyze the effects of alternative management regimes on species of concern and their habitats.

Identifying the Best Available Science

The requirement to bring to bear the best available science in resource decision-making begins with the process of gathering scientific information. This initial step must be followed by a process of vetting that information; that is, critically assessing the quality and pertinence of available data, analyses, and results from research and monitoring. Combined, these two steps are absolute prerequisites for meaningful subsequent analyses to guide decision-making. The recently released *Interagency Environmental Program 2010 Pelagic Organism Decline Workplan and Synthesis of Results* goes a long way toward accomplishing the initial step with respect to a number of pelagic species by gathering the best available science on those species and the broader Delta ecosystem. It offers a useful compendium of published information and agency reports, and includes much of the available pertinent data, analyses, and syntheses that have been drawn from studies in the estuary. But, as it stands, the report is an unreliable source of information to complete the analyses necessary to guide agency decision-making, as it doesn't differentiate between results from data derived from rigorous studies that employ an experimental framework and the most robust analytical tools, and results derived from other, lesser approaches. And, the report promulgates and espouses agency findings that a Federal District Court aided by two respected science experts have found to be not valid. While some contributors and consumers of past reports from the same series would argue that the report is not intended to be a resource for the specific purpose of representing the best available science, its ambiguous intent and presentation has it cited in journals and agency reports and resource management decisions as if an authoritative scientific source, which it is not.

Accordingly, the ISB can and should pick up where the *Workplan and Synthesis of Results* left off by providing an expert assessment of the state of knowledge of the environmental stressors that act to compromise desired conditions in the Delta. That task could not be more timely. To date, the most recent draft of the Bay Delta Conservation Plan (BDCP), for example, offers no data-based synthesis of the roles of individual or multiple stressors acting on listed and other at-risk, native species and their habitats in the Delta, hence is yet unable to assess objectively either the effects of proposed water conveyance actions or proposed management, restoration, or acquisition schemes. The BDCP is not lacking for a stressors classification; instead, its consultant authors need an expert assessment of the identities, roles, and cumulative effects of environmental stressors that are acting individually and in concert to compromise the Delta's ecosystems and species of concern.

Using the Best Available Science

The process of informing agency determinations with the best available science, and then providing guidance to management programs that are intended to recover at-risk species and their habitats, has several discrete steps that require contributions from distinct participants. This process is described in some detail in the attached paper from the journal *Environmental Management*. Two separate steps in the process require the active involvement of scientists; the first is described above. It is the requirement that any and all available technical information that is pertinent to and may be useful in shaping and directing the conservation response to species and ecosystems at risk – including identifying management or restoration actions, determining

their timing and the locations of the actions, engaging the right tools to facilitate the actions, and subsequently assessing the effectiveness and efficacy of the actions – be vetted and considered. That process step requires direct contributions from scientists. It is fully within the capacity of the ISB, or additional experts that the ISB might choose to assist it, to perform that essential task in support of delta stewardship.

The need for scientific expertise and the role of the ISB in Delta restoration, however, does not end with identification of that information that can defensibly be used to support policy decisions and management action. Scientists need to engage in the next step in the process of bringing science to decision-making; that is, the actual use of the “best available science” in what the federal wildlife agencies refer to as “effects analysis,” and the Environmental Protection Agency and others refer to as “risk assessment.” In resource management decision-making, federal and state agencies have too often neglected to carry out this essential and required step of engaging the best available science in their determinations and regulatory actions. This is certainly the case in the Delta. In our view, it is undeniable that the failure to both identify and use the best available science led a Federal District Court to state that “sloppy science” made the U.S. Fish and Wildlife Service’s determinations in its recent biological opinion on delta smelt “arbitrary, capricious, and unlawful.” Likewise, it led a National Research Council committee to indicate that it “does not understand” the basis for the link between Delta salinity conditions and delta smelt population trends, which are asserted by the Fish and Wildlife Service to be the essential determinant of the fish’s current imperiled status.

As described in the National Research Council’s volume *Science and Decisions* (2009) and in the attached article, risk assessment/effects analysis is a structured process that uses best available science to inform selection among resource management decisions or strategies. Effects analysis assesses the benefits and costs – both ecological and economic – that attend different planning outcomes. For imperiled species, effects analysis employs well-established approaches using population viability analysis tools, informed by the best available data on targeted species and the environmental factors that put them at risk. It is a task that needs the expertise of scientists to succeed. Effects analysis was a required element in the biological opinions, but was not carried out appropriately. Further, effects analysis is still missing in the drafts of the BDCP document circulated to date. Without this essential decision support step, transparently and fully carried forth, policy decisions and the actions that follow are arbitrary and not defensible. It is not clear how the recovery of species and the restoration ecosystems in the Delta can advance without the direct engagement of the ISB members or other scientists in this essential activity.

Concluding Thoughts

The general opinion of the ISB on environmental stressors and classifications of them presumably will be accorded high standing by the Delta Stewardship Council and others active in the effort to halt and reverse the decline of numerous at-risk, native species in the Delta as well as their respective habitats, but it will do nothing to address historic shortcoming in the application of the best available science in resource management decision-making stemming from the failure to properly identify and use the best available science. Therefore, we urge the

ISB to use its position and expertise to discriminate formally from among available information, that constitutes the “best” science – in regards to species-environmental stressor relationships, and in other diverse attributes of the complex Delta ecosystems. And, the ISB should assist the Delta Stewardship Council and other state and federal regulatory agencies in applying those data, analyses, syntheses, system models and other “scientific” information and tools that are reliable in the requisite analysis of the probable effects of the diverse future Delta action scenarios that are available for consideration. We are concerned that engagement of the ISB in tasks peripheral to direct support of agency and inter-agency efforts to restore a desired Delta ecosystem – anything less than formal integration of the ISB, and its best judgments regarding best science and the role of best science in assessing the effects of future actions the Delta environment, into the structure of decision-making for the Delta – will simply be a continuation of the opportunities lost over the past decade.

Thank you for considering the Coalition’s comments.

Sincerely,

A handwritten signature in blue ink, appearing to read 'W. D. Phillimore', with a stylized flourish at the end.

William D. Phillimore
Board Member

cc: Joe Grindstaff (via e-mail)

encl.